WHAT IS CLAIMED IS:

1. A rubber composition which comprises

(A) 100 parts by weight of at least one diene-based elastomer,

(B) about 10 to about 150 phr of at least one particulate reinforcing filler comprised of about 10 to about 100 phr of at least one particulate synthetic silica-based material having hydroxyl groups on the surface thereof comprised of at least one of aggregates of synthetic amorphous silica, fumed silica and silica modified carbon black, and correspondingly, from zero to about 80 phr of rubber reinforcing carbon black, and

(C) at least one organo-metal additive of at least one of organo-tin, organo-titanium and organo-zirconium compounds;

wherein said organo-tin compound having a valence of four is of the following general Formula (I), with corresponding specifications (I-a), (I-b), (I-c), and (I-d):

(I) $$R^z_2\ Sn[Q(C(R^x))_a(C(H)_c\ H)_b(C(O))_dR^y]_2$$

wherein:

(I-a) where Q is oxygen, a and b are zero, d is equal to one, and R^y is an alkyl radical containing from one to 25 carbon atoms, where R^z is an alkyl radical containing from one to 25 carbon atoms, or

(I-b) where Q is oxygen, a, b, and d are equal to one, c is zero, R^x and R^y are the same or different radicals selected from hydrogen, methyl, CF_3, propyl, butyl and phenyl radicals, where R^z is an alkyl radical containing from one to 25 carbon atoms, or

(I-c) where Q is sulfur, a is zero, b, c, and d are one, and R^y is an alkyl radical containing from one to 25 carbon atoms, where R^z is an alkyl radical containing from one to 25 carbon atoms, or

(I-d) where Q is oxygen or sulfur, a, b, and d are zero and R^y is an alkyl radical containing from one to 25 carbon atoms, where R^z is an alkyl radical containing from one to 25 carbon atoms;

wherein, optionally, one or more of R^x, R^y, and R^z are alkyl radicals containing heteroatoms, selected from at least one of Silicone, Nitrogen, Phosphorus, Oxygen, and Sulfur;

wherein said organo-tin compound having a valence of two is of the general

Formula (II), with corresponding specifications (II-a), (II-b), (II-c), and (II-d):

(II) $$Sn[Q(C(R^x))_a(C(H)_c H)_b(C(O))_dR^y]_2$$

wherein:

(II-a) where Q is oxygen, a and b are zero, d is equal to one, and R^y is an alkyl radical containing from one to 25, alternatively from 1 to 18, carbon atoms, or

(II-b) where Q is oxygen, a, b, and d are equal to one, c is zero, R^x and R^y are the same or different radicals selected from hydrogen, methyl, CF_3, propyl, butyl and/or phenyl radicals, preferably from hydrogen and methyl radicals, or

(II-c) where Q is sulfur, a is zero, b, c, and d are one, and R^y is an alkyl radical containing from one to 25, alternatively from 1 to 18, carbon atoms, or

(II-d) where Q is oxygen or sulfur, a, b, and d are zero and R^y is an alkyl radical containing from one to 25, alternatively from 1 to 18, carbon atoms;

wherein, optionally, one or more of R^x and R^y are alkyl radicals containing heteroatoms selected from at least one of Silicon, Nitrogen, Phosphorus, Oxygen, and Sulfur;

wherein said organo-titanium or organo-zirconium compounds having a valence of four are of the general Formula (III), with corresponding specifications (III-a), (III-b), (III-c), and (III-d):

(III) $$R^zO_{j-n}M[Q(C(R^x))_a(C(H)_c H)_b(C(O))_dR^y]_n$$

wherein:

(III-a) where M is a metal selected from at least one of Scandium, Yttrium, Titanium, Zirconium, Hafnium, Vanadium, Niobium, and Tantalum, where j is the highest valence state of M, where Q is oxygen, a and b are zero, d is equal to one, n is from 1 to j, R^y is an alkyl radical containing from one to 25 carbon atoms, where R^z is an alkyl radical containing from one to 25 carbon atoms, or

(III-b) where M is a metal selected from at least one of Scandium, Yttrium, Titanium, Zirconium, Hafnium, Vanadium, Niobium, and Tantalum, where j is the highest valence state of M, where Q is oxygen, a, b, and d are equal to one, c is zero, n is from 1 to j, R^x and R^y are the same or different radicals selected from hydrogen, methyl,

CF3, propyl, butyl and phenyl radicals, where R^z is an alkyl radical containing from one to 25 carbon atoms, or

(III-c) where M is a metal selected from at least one of Scandium, Yttrium, Titanium, Zirconium, Hafnium, Vanadium, Niobium, and Tantalum, where j is the highest valence state of M, where Q is sulfur, a is zero, b, c, and d are one, n is from 1 to j, R^y is an alkyl radical containing from one to 25 carbon atoms, where R^z is an alkyl radical containing from one to 25 carbon atoms, or

(III-d) where M is a metal selected from at least one of Scandium, Yttrium, Titanium, Zirconium, Hafnium, Vanadium, Niobium, and Tantalum, where j is the highest valence state of M, where Q is oxygen, n is from 1 to j, a, b, and d are zero, R^y and R^z are the same or different alkyl radicals containing from one to 25 carbon atoms, where R^z is an alkyl radical containing from one to 25 carbon atoms;

wherein, optionally, one or more of R^x, R^y, and R^z are alkyl radicals containing heteroatoms, selected from at least one of Silicon, Nitrogen, Phosphorus, Oxygen, and Sulfur;

wherein said organo-tin compounds having a valence of four are of the general Formula (IV), with corresponding specifications (IV-a) and (IV-b):

(IV) $R^xSnR^y_3$

wherein:

(IV-a) where R^x and R^y are the same or different alkyl radical containing from one to 25 carbon atoms;

(IV-b) where R^x is a polymeric chain consisting of at least one conjugated diene monomer such as, for example butadiene or isoprene of which the molecular weight (Mw) is from about 1,000 to about 300,000 and R^y is an alkyl radical containing from one to 25 carbon atoms;

wherein, optionally, one or more of R^x and R^y are alkyl radical containing heteroatoms selected from at least one of Silicon, Nitrogen, Phosphorus, Oxygen, and Sulfur.

2. The rubber composition of claim 1 wherein said rubber composition is

exclusive of additional additive(s) which will readily react with hydroxyl groups contained on the surface of said silica-based material to create an alcohol.

3. The rubber composition of claim 1 wherein said rubber composition is exclusive of any additional additive selected from at least one of bis-(3-alkoxysilylalkyl) polysulfides having an average of at least 2 connecting sulfur atoms in its polysulfidic bridge, alkoxy silanes, and alkyl silanes

4. The rubber composition of claim 1 wherein said silica-based material is in a form of aggregates of synthetic amorphous silica.

5. The rubber composition of claim 1 wherein said silica-modified carbon black is a carbon black modified by treatment with an alkoxysilane or by co-fuming carbon black and silica at an elevated temperature.

6. The rubber composition of claim 1 wherein said organo-metal compound is introduced to the rubber composition as a composite of said organo-metal compound and said silica based material or as a compsite of said organo-metal compound and said carbon black.

7. The rubber composition of claim 1 wherein said organo-metal compound is introduced to the rubber composition as aggregates of synthetic amorphous precipitated silica which has been pre-treated with said organo-metal compound.

8. The rubber composition of claim 1 wherein said organo-metal compound is selected from at least one of dibutyltin dilaurate, di-n-butylbis(2-ethylhexanoate)tin, di-n-butylbis(2,4-pentanedionate)tin, di-n-butyldiacetoxytin, di-n-butyldiacrylatetin, di-n-butyldimethacrylatetin, dimethyldineodecanoatetin, dioctyldilauryltin and dioctyldineodecanoatetin.

9. The rubber composition of claim 1 wherein said organo-metal compound is selected from at least one of tin(II) 2-ethylhexanoate, bis(neodecanoate)tin,

diacetoxytin, stannous acetate, tin(II) hexafluoropentanedionate, and tin(II) 2,4-pentanedionate.

10. The rubber composition of claim 1 wherein said organo-metal additive is selected from at least one of titanium n-butoxide, dibutoxytitanium bis-2,4-pentanedionate, titanium diisopropoxide (bis-2,4-pentanedionate), titanium diisopropoxide bis(tetramethylheptanedionate), titanium ethoxide, titanium 2-ethylhexoxide, titanium isobutoxide, titanium methoxide, titanium n-nonyloxide, titanium n-propoxide, titanium stearyloxide, titanium triisostearoylisopropoxide, neopentyl(diallyl)oxy, dibutoxyzirconium bis-2,4-pentanedionate, trineodecanoyl zirconate, neopenyl(dially)oxy tri(dodecyl)benzene-sulfonyl zirconate, neopentyl(diallyl)oxy tri(dioctyl)phosphato zirconate, neopentyl(dially)oxy trimethylacryl zirconate, neopentyl(dially)oxy triacryl zirconate, dineopenyl(dially)oxy diparamino benzoyl zirconate, dineopentyl(diallyl)oxy di(3-mercapto) propionic zirconate, yttrium acetate, vanadium(III) 2,4-pentanedionate, and tantalum(V) tetraethoxide pentainedionate.

11. The rubber composition claim 1 wherein said organo-metal additive is of the general Formula (IV) wherein said R^x and R^y radicals are the same or different and are selected from at least one of methyl, ethyl, propyl, butyl, pentyl, hexyl, septyl, octyl, nonyl, decyl, undecyl, dodecyl, tridecyl, tetradecyl, pentadecyl, hexadecyl, heptadecyl, and octadecyl radicals and from heteroatom-containing alkyl radicals selected from at least one of bis(trimethylsilyl)phosphate, methylpropanoate, 2-ethylhexylmaleate, 1-thioglycerol, and 1-ethoxyvinyl radicals; and from polymeric chains for said R^x wherein said polymeric chains are selected from at least one of polybutadiene, polyisoprene, poly-stryene-butadiene, poly-stryrene-isoprene, and poly-styrene-butadiene-isoprene.

12. The rubber composition of claim 1 wherein said organo-metal additive is selected from at least one of allyltri-n-butyltin, allyltrimethyltin, allytriphenyltin, divinyldi-n-butyltin, 1-ethoxyvinyltri-n-butyltin, ethynyltri-n-butyltin, phenylethynyltri-n-butyltin, phenyltri-n-butyltin, tetraallyltin, tetra-n-butyltin,

tetraethyltin, tetra-n-octyltin, tetra-n-pentyltin, tetraphenyltin, tetra-p-tolyltin, and 2-thiophenyltri-n-butyltin.

13. The rubber composition of claim 1 wherein said organo-metal additive is selected from at least one of dibutyltin dilaurate, tin(II) 2-ethylhexanoate, dibutoxytitanium bis-2,4-pentanedionate, and dibutoxyzirconium bis-2,4-pentanedionate.

14. The rubber composition of claim 1 wherein said diene-based elastomer is selected from homopolymers and copolymers of isoprene and/or 1,3-butadiene and copolymers of at least one of isoprene and 1,3-butadiene with a vinyl aromatic compound selected from styrene and alphamethyl styrene.

15. The rubber composition of claim 1 wherein said diene rubber composition contains a syndiotactic polybutadiene polymer.

16. The rubber composition of claim 1 wherein said diene rubber composition contains a tin coupled elastomer prepared by organic solvent solution polymerization of monomers selected from 1,3-butadiene, isoprene and styrene diene monomers, and wherein said elastonmers are selected from at least one of butadiene copolymers, isoprene/butadiene copolymers, styrene/isoprene copolymers and styrene/isoprene/butadiene terpolymers.

17. An industrial rubber product selected from power transmission belts, conveyor belts, and fluid transmission hoses which contain at least one component comprised of a rubber composition of claim 1.

18. A tire which contains at least one component comprised of a rubber composition of claim 1.

19. A tire having a tread which is comprised of a rubber composition of claim 1.

20. A tire having a tread of a cap/base construction where said tread cap is

designed to be ground-contacting and said tread base is not intended to be ground contacting, wherein at least one of said tread cap and tread base is comprised of a rubber composition of claim 1.